IN THE CLAIMS

Please amend the claims as follows:

Claims 1-3 (canceled)

Claim 4 (previously presented): An information recording medium comprising:

a management area where management information is recorded; and

a plurality of physical sector areas used to record a plurality of physical sector data blocks, which are generated by combining some data contained in a plurality of ECC blocks,

wherein the plurality of ECC blocks as a source of the plurality of physical sector data blocks to be recorded in said plurality of physical sector areas is generated via a predetermined process, and

the predetermined process generates the plurality of independent ECC blocks by:

generating sector data which contains a data ID and is formed of a first number of bytes;

generating re-arranged sector data by re-arranging data contained in the sector data to predetermined positions;

generating a sector block by combining a plurality of re-arranged sector data items;

generating a plurality of segmented blocks by segmenting the sector block;

generating outer-code parity data by encoding data in a column direction, which forms each segmented block;

generating inner-code parity data by encoding data in a row direction, which forms each segmented block; and

individually appending the generated outer- and inner-code parity data to each segmented block.

Claim 5 (original): A medium according to claim 4, wherein each physical sector data block recorded on said physical sector area is formed of a set of data lines each of which is made up of a portion of the sector data and a portion of the inner-code parity data, and consists of a second number of bytes, and data lines each of which is made up of only a portion of the outer-code parity data and consists of the second number of bytes, and a total number of data lines of the set is an integer multiple of the number of ECC blocks.

Claim 6 (original): A medium according to claim 4, wherein each physical sector data block recorded on said physical sector area contains the data ID, and has a data structure in which the data ID is arranged at a specific position.

Claim 7 (original): A medium according to claim 4, wherein each physical sector data block recorded on said physical sector area contains the data ID, and has a data structure in which the data ID is arranged at a head position, and a data line made up of only a portion of the outer-code parity data is arranged as a final line.

Claim 8 (canceled)

Claim 9 (previously presented): An information recording medium comprising:

a management area where management information is recorded; and

a plurality of physical sector areas used to record a plurality of physical sector data blocks, which are generated by combining some data contained in a plurality of ECC blocks,

wherein said physical sector area is an area on which data alternately extracted from different data lines in the physical sector data block is recorded in turn.

Claim 10 (original): A medium according to claim 4, wherein physical sector information which indicates the physical sector data block to be recorded on said physical sector area corresponds to logical sector information which indicates the sector data.

Claim 11 (original): A medium according to claim 10, wherein an arrangement of at least some data of the plurality of ECC blocks as a source of the plurality of sector data blocks to be recorded on said plurality of physical sector areas corresponds to logical sector information.

Claim 12 (canceled)

Claim 13 (currently amended): An information recording apparatus for recording information on an information recording medium, comprising:

a generation section configured to generate a plurality of ECC blocks; and

a recording section configured to generate a plurality of physical sector data blocks by combining some data contained in the plurality of ECC blocks, and ~~recording~~ to record the plurality of physical sector data blocks on a plurality of physical sector areas on the information recording medium,

wherein said generation section generates the plurality of independent ECC blocks by:

generating sector data which contains a data ID and is formed of a first number of bytes;

generating re-arranged sector data by re-arranging data contained in the sector data to predetermined positions;

generating a sector block by combining a plurality of re-arranged sector data items;

generating a plurality of segmented blocks by segmenting the sector block;

generating outer-code parity data by encoding data in a column direction, which forms each segmented block;

generating inner-code parity data by encoding data in a row direction, which forms each segmented block; and

individually appending the generated outer- and inner-code parity data to each segmented block.

Claim 14 (original): An apparatus according to claim 13, wherein said recording section alternately extracts data from different data lines in the physical sector data block, and records the extracted data in turn on the physical sector area.

Claim 15 (original): An apparatus according to claim 13, wherein said recording section records the physical sector data block on the physical sector area with physical sector information that indicates the physical sector data block corresponding to logical sector information that indicates the sector data.

Claim 16 (original): An apparatus according to claim 15, wherein said recording section records the physical sector data block on the physical sector area with an arrangement of at least some data of the plurality of ECC blocks corresponding to logical sector information.

Claim 17 (canceled)

Claim 18 (currently amended): An information reproduction apparatus for reproducing an information recording medium which comprises a plurality of physical sector areas on which a plurality of physical sector data blocks generated by combining some data contained in a plurality of ECC blocks is recorded, comprising:

a read-out section configured to read out the plurality of physical sector data blocks from the plurality of physical sector areas on the information recording medium; and

a reproduction section configured to reproduce data by generating the plurality of ECC blocks from the plurality of readout physical sector data blocks,

wherein said reproduction section generates the plurality of ECC blocks via a predetermined process,

the predetermined process generates the plurality of independent ECC blocks by:

generating sector data which contains a data ID and is formed of a first number of bytes;

generating re-arranged sector data by re-arranging data contained in the sector data to predetermined positions;

generating a sector block by combining a plurality of re-arranged sector data items;

generating a plurality of segmented blocks by segmenting the sector block;

generating outer-code parity data by encoding data in a column direction, which forms each segmented block;

generating inner-code parity data by encoding data in a row direction, which forms each segmented block; and

individually appending the generated outer- and inner-code parity data to each segmented block, and

said reproduction ~~means~~ section reproduces the sector data by utilizing the predetermined process.

Claim 19 (original): An apparatus according to claim 18, wherein the physical sector data block read out by said read-out section is formed of a set of data lines each of which is made up of a portion of the sector data and a portion of the inner-code parity data, and consists of a second number of bytes, and data lines each of which is made up of only a portion of the outer-code parity data and consists of the second number of bytes, and a total number of data lines of the set is an integer multiple of the number of ECC blocks,

each physical sector data block recorded on said physical sector area contains the data ID, and has a data structure in which the data ID is arranged at a head position, and a data line made up of only a portion of the outer-code parity data is arranged as a final line, and

said reproduction section reproduces the data ID from the head position of each physical sector data block.

Claim 20 (original): An apparatus according to claim 19, wherein the physical sector area read out by said read-out section records data alternately extracted from different data lines in the physical sector data block, and

said reproduction section reproduces the physical sector data block read out from the physical sector area under a condition that the data alternately extracted from the different data lines is recorded.